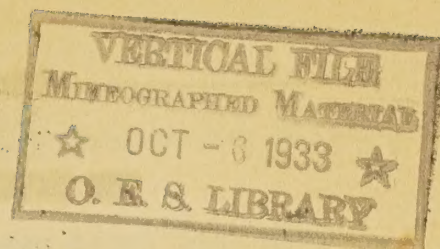


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UNITED STATES DEPARTMENT OF AGRICULTURE

Washington, D.C.

THE EXTENSION POULTRY HUSBANDMAN

Issued by the Bureau of Animal Industry and the  
Office of Cooperative Extension Work, Cooperating,  
H. L. Shrader, Senior Extension Poultry Husbandman

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Serial Number 4 --

July, 1933

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THE DEVELOPMENT OF A QUALITY-EGG-PRODUCTION  
PROGRAM IN OHIO

By

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The egg-marketing problem for the poultry specialist is fundamentally different from any other phase of our poultry work. In the fields of poultry feeding, breeding, housing, and disease control, we plan our programs and develop our material with definitely established experimental facts as a basis. Advancement in these fields is usually preceded by experiments at the agricultural colleges and experiment stations and we go forth fortified with scientific data to substantiate our recommendations. But any development or improvement which comes in egg marketing must come either through efforts made by dealers or farmers themselves.

In meeting this problem we must be willing and prepared to work with both the dealers and the producers. Our chief concern in either case is whether their program seems sound and feasible. We can never be certain even then that every effort to improve marketing methods will be successful, but I do feel that we are justified in withholding our support and help for that reason.

After all, any attempt to improve marketing must be thought of as an experiment and we must realize that even our simpler poultry problems have required several years of experimental research to determine the solution.

Organized poultry marketing work began in Ohio during 1924 and 1925 with the development of the Ohio Poultry Producers Cooperative Association. The organization as such failed, but it did succeed in emphasizing the possibilities of poultry as a source of farm income in northwestern Ohio, and it did teach the producers the importance of quality-egg production which helped to build the reputation of that section as a source of quality eggs.



The Pandora Cooperative Association which began about this same time has had a slow but successful growth. However, it was not until last year after the Farm Bureau took over the responsibility of the development that we ever were asked to help conduct an educational campaign with the producers on quality-egg production.

During this same period two large Ohio egg dealers began cautiously to investigate the possibilities of buying eggs on a graded basis. They have continued the policy of buying eggs on grade and have done much to stimulate a better reputation for Ohio eggs, but because we did not fully appreciate the problems in graded egg buying and because they did not appreciate that we could be of help to them, we never developed a program with them.

Some three or four years ago, the poultrymen in Wayne County asked for help on egg marketing, but the large number of egg hucksters from Cleveland, Youngstown, and Akron that covered that territory raised doubts as to the possibilities of a successful cooperative development. The success of the egg auction in the East suggested a possibility for improved egg marketing in this territory. The Wayne County poultrymen were informed about this development in the East and asked us to make an analysis of their conditions to determine the possibilities of this method of marketing in their section. The analysis showed that the chances of success were favorable so we organized a tour to the eastern auctions. This convinced the poultrymen, and plans were laid at once for the development of an organization.

Gradually through intensive study of the problems of the eastern auctions and as plans for the auction developed, we began to appreciate that an educational program of improvement in egg quality was necessary if the organization was going to succeed. Quality-egg production meetings and candling demonstrations were held with the producers and every poultryman who agreed to use the auction was visited before operations began. He was informed of the importance that the quality of eggs delivered by the members would have on the success of the venture and also how care of the eggs would affect what the individual got for his eggs. A few weeks after the auction started, those producers who failed to deliver good-quality eggs were again visited in an effort to help correct the problems that were causing the poor-quality eggs.



It was only after coming face to face with these problems in connection with this effort to improve Ohio egg-market outlets that egg quality played a part in any marketing improvement.

The Ohio Farm Bureau and the Farmers Equity Union were both launching egg-marketing work in several counties at this time and each requested help on meetings and demonstrations to show how to produce better-quality eggs.

Our appreciation of the problem and the need of these marketing agencies for assistance in improving their members' eggs led to the development of the quality-egg-production project which follows.

#### PURPOSE

- To encourage the production of quality eggs.
- To stimulate handling and care of eggs to maintain original quality.
- To promote the marketing of eggs on a graded basis.
- To create a better reputation and demand for Ohio eggs.

#### PLAN OF QUALITY-EGG-PRODUCTION PROJECT (Condensed)

1. Geographic limitations: This project is to be limited to counties in which marketing agencies are buying or planning to buy eggs on a graded basis.
2. Procedure:
  - A. Visits of agents and specialists to local marketing agencies.
  - B. Conference with local egg-marketing agencies. Unless at least one marketing agency in the county can be influenced to buy eggs on a graded basis, further development of the project is deemed unwise.
  - C. County-wide egg and poultry marketing school.



Suggested Program

10:00 a. m. Poultry Marketing Problems in \_\_\_\_\_ County- - - - County Agent  
10:15 Feeding and Management Practices that Affect  
Egg Quality - - - - -Poultry specialist  
11:00 How I Have Developed Good Market Outlets - - - Local poultryman  
11:30 Poultry Marketing Developments in other  
Sections of the State - - - - -Poultry specialist  
1:00 p. m. The marketing of Eggs in the United States- - -Motion picture  
1:30 The Advantage of Buying and Selling Eggs on  
a Graded Basis - - - - -Poultry specialist  
2:15 Problems of the Poultry and Egg Distributor- - Local marketing man  
3:00 Egg Grades and Egg Grading - Lecture and  
Demonstration - - - - -Poultry specialist

D. Poultry-marketing tour.

E. Quality-egg-production demonstrations.

3. Relation of project to other projects.

4. Prospect list:

All farm poultry record and calendar cooperators.  
All grow-healthy-pullet cooperators.  
All producers selling eggs to dealers cooperating in the project.  
All farms who list flocks of certain size for taxation.  
(Size of flocks limits to be decided by local poultry committee  
and poultry dealers).

5. Publicity on project:

A. Direct mail.

B. News articles.

1. Stories in local newspapers.

- a. Relative to the value of different grades of eggs and the importance of grade on the income from the poultry flock.
- b. Causes of low-quality eggs.
- c. Experiences of producers in improving the quality of their eggs. Experiences of buyers in greater ease of selling graded eggs.
- d. Effect of producers' methods on quality of eggs produced.

2. Stories in district and State farm papers.
3. Announcing the project at other meetings.
4. Publicity through other cooperating agencies.
  - a. Contacts should be made with hatcherymen, feed dealers, lumber dealers, equipment manufacturers, and others who come in contact with poultrymen urging them to help stimulate the interest of the farmers in this project.
6. Season for development of project: June 1 to January 1.
7. Follow-up work.
8. Cooperation of other agencies.
9. Literature on project.
10. Practices suggested by project:
  - Control egg size, shape, and color by selection in breeding.
  - Produce infertile eggs.
  - Feed a well-balanced ration.
  - Produce clean eggs.
  - Collect and handle eggs to preserve quality.
  - Pack eggs properly.
  - Market eggs at least twice each week.
  - Protect eggs from sun and wind on way to market.
11. Qualities in eggs to be shown in the candling and grading demonstrations.
12. Measuring results: Tabulate the average percentage of eggs of each grade delivered by the producers before and after quality-egg-production demonstrations.



## FORCING EARLY MOLT

Economic conditions the last two years have seemingly forced the price of eggs relatively lower in the spring months, which has caused flock owners to take an increased interest in securing the higher-priced fall eggs. One method of attacking this problem has been the forced early molt. In the last annual report of the State College of Washington results from Mason County are given as follows:

"In an endeavor to regulate the seasonal egg production so as to have the molt come early in the summer during cheap egg prices and have the birds in high production in the fall and winter during the highest prices, cooperators were secured to molt two pullet flocks and one flock of 2-year-old hens during the spring and summer.

"Everything possible was done between June 1 and July 21 to make a pullet flock molt. On July 21, however, the 500 pullets laid no eggs. Feeding for eggs and all-night lighting were then started. In 10 days they were laying almost 50 percent. In 3 weeks they were producing 70 percent and have held that lay consistently until the present time (December) with no further signs of molting.

"On another ranch a pullet flock and a flock of 2-year-old birds were molted the middle of July. The pullets molted readily but the 2-year-old birds were hard to molt. At the end of one month both flocks were laying practically no eggs, and feeding for eggs and all-night lighting were started. The flocks were put together in one house and quickly brought up to 50 percent production."

H. H. Alp in Illinois secured the cooperation of the experiment station and took 120 White Leghorns on the university farm. These birds had laid especially well as pullets; by discontinuing the mash feeding and throwing them entirely on a maintenance ration consisting of grain and free range Mr. Alp was quite successful in bringing about a full molt and a cessation of laying. At the conclusion of a 12-week period a majority of the birds had gone through a two-third molt. The birds were then confined, mash feeding was resumed, and all-night lights were added. During this period both mash and grain were kept before the birds in hoppers all the time. These birds came back to a 50 percent egg production and maintained this fairly regularly for the next four months.



The all-night lights appear to be more successful in bringing birds back from a forced molt than any other method. In some flocks great difficulty is experienced in forcing the molt by the first of June. In the Illinois experiment the average weight of the birds had begun to decline six weeks before the molting period was begun; but eight weeks after the mash feeding was resumed the birds were back to normal weight. A chart showing the production curve is published in this issue. (See page 9).

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#### Comparison of Four Feeding Methods

The poultry specialists on farm visits often observe a wide variety of feeding practices but very few feeding management projects have been reported by the experiment stations.

One year's results on four methods of feeding the layers is reported in Circular of Information 78 by the Oregon Experiment Station.

The same ration was used in four different methods of feeding -

Pen 1. Mash in hopper, grain in litter.

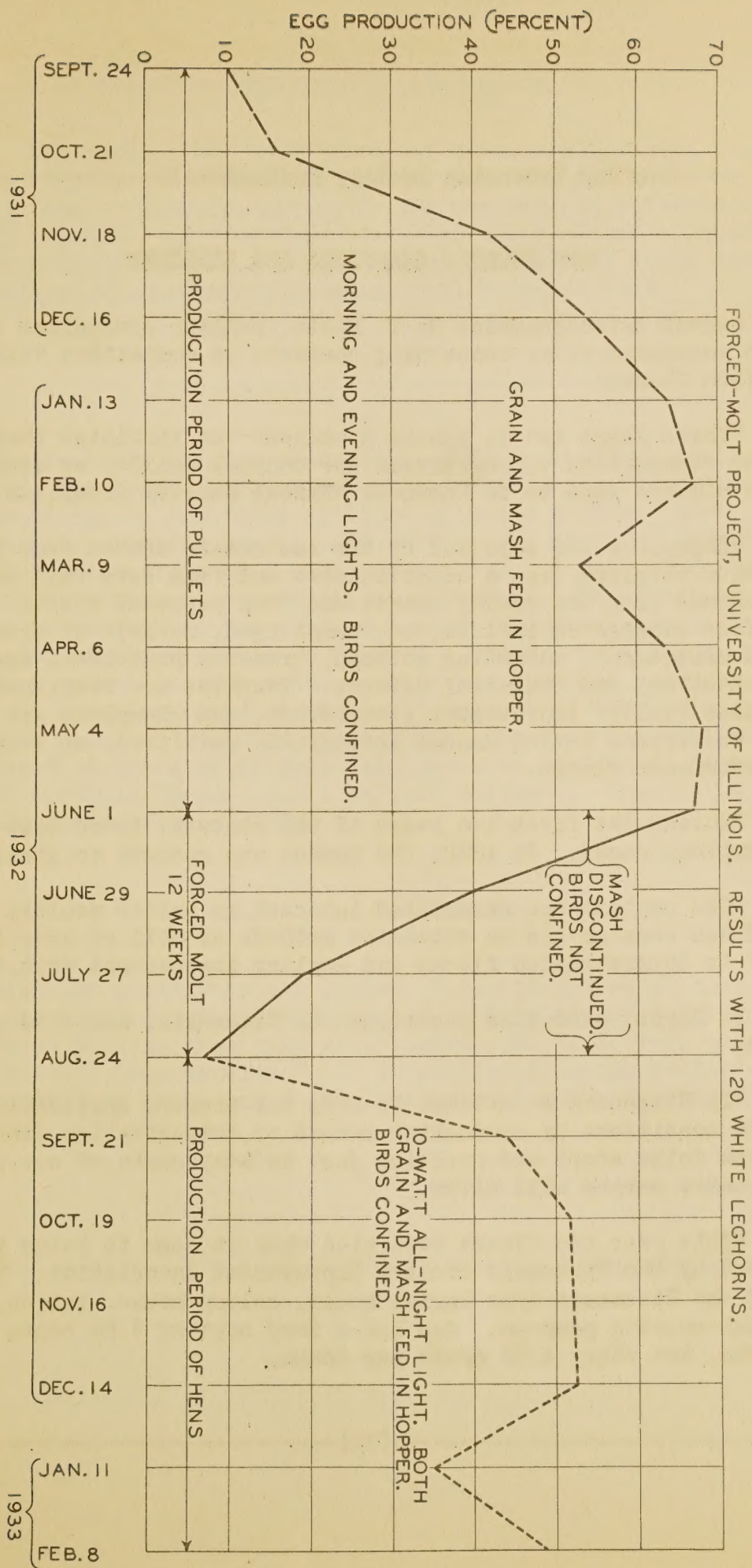
Pen 2. Mash and grain in hoppers.

Pen 3. Pellets in hoppers.

Pen 4. All mash in hoppers.

There was no significant difference in mortality, size of eggs, or increase in body weights. Pen 1 gave the highest production with 225.4 eggs per bird. Pens 2 and 4 were close together with 194.2 and 194.1 eggs, respectively, while Pen 3, the pellet-fed pen, was fourth with a production of 179.3 eggs per bird.







## HOW POULTRY CHAMPIONS ARE SELECTED

In recent correspondence G. T. Klein, poultry specialist in Kansas, made these recommendations concerning contests in connection with demonstration farm flocks:

"Three years ago in Kansas a contest was initiated that would give recognition to poultrymen for unusual ability or success. The winners were to be known as "Kansas poultry champions."

"Champions are selected by the score-card method from information obtained from a questionnaire and from data that can be obtained from the county agents and from personal visits. The points considered include, equipment used, methods of brooding and management, marketing methods, breeding practices, egg production, and financial returns. Trophies are furnished by the Kansas Poultry Improvement Association, and champions are limited to poultrymen having Kansas accredited, certified, or record-of-performance flocks.

"During the first two years of the contest, there were five champions named. In 1932, the number was reduced to three.

"The contest has stimulated interest in better poultry methods and has been an aid in extension methods as well as creating interest in demonstration flocks and poultry improvement work."

J. B. Hayes, extension poultryman in Wisconsin, has also given us his method.

"In Wisconsin we attempt to keep our program applicable to farm conditions by conducting record or demonstration flocks. These folks adopt and practice just as many parts of our program as their set-up will allow.

"This year two flocks were tied when it came to being recognized by the Wisconsin Poultry Improvement Association. Each had the Wisconsin-type laying house, colony house, ration, and chick-rearing program. One had a feed cost of 4.53 cents per dozen, the other 4.73 cents per dozen.



"To prevent any possibility of this work becoming other than an educational effort, no announcement for the basis of award is made. Committee action by the association determines whether to base the award on feed cost, average production, conformity to program, or other means. Flock cooperators never know in advance which particular phase will be stressed."

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The coal-tar paint developed by A. C. Cunningham, civil engineer, U. S. Navy, has found a widespread use at the navy yards and naval stations, and no doubt can be admirably utilized around a poultry plant, particularly on the roosts, dropping boards, and roofs. The mixture recommended by Mr. Cunningham consists of 8 parts of coal-tar, 1 part of Portland cement, and 1 part of kerosene, volumetric measurements. The function of the cement is to neutralize the acid of the tar and give body to the paint; the function of the kerosene is that of a dryer. By placing an excess of Portland cement in this paint a thick paste may be produced, which is of value in stopping seams and holes of any extent which could not be filled with paint of ordinary consistence. Another combination of this mixture used at the Norfolk Navy Yard consists of 4 parts of coal tar, 1 part of Portland cement, and 1 part of kerosene. This paint has been especially successful on roofs.

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Although poultry is not listed as one of the seven basic commodities in the Agricultural Adjustment Act, a Special Crops Section, which will include poultry, has been established. H. R. Tolley, acting chief of this section, has secured W. D. Termohlen, formerly poultry marketing specialist in Iowa, and J. W. Kinghorne to carry forward this poultry work.



SUMMARY OF REPORTS ON DEMONSTRATION FARM FLOCKS  
(As furnished by 28 States)

November 1, 1931 - October 31, 1932

State	Farms	Average size of flock	Eggs per hen	Mortal- ity	Feed cost per hen	Total income per hen	Feed cost per doz. eggs	Selling price per doz. eggs
	Number	Number	Number	Percent	Dollars	Dollars	Cents	Cents
Ala.	125	191	158	--	1.25	--	9.5	18.1
Ariz.	20	327	167	18.8	1.52	--	--	--
Conn.*	187	383	166	17.4(P) 12.9(H)	--	--	--	--
Del.	106	336	138	28.8(P) 20.6(H)	--	--	--	--
Ill.	21	510	140	26.0	.66	--	6.0	15.0
Ind.	114	276	145	--	--	1.05***	--	16.8
Iowa	56	223	142	24.7	--	2.57	--	13.2
Kans.*	414	131	157	--	--	--	6.3	--
La.	48	141	154	11.4	1.51	--	--	--
Md.	165	297	148	36.7(P) 38.2(H)	--	--	--	--
Mass.	--	332	147	23.3	--	--	--	--
Maine	96	213	161	--	2.90	--	--	--
Minn.	71	249	147	--	--	--	--	--
Mo.	354	157	147	--	.97	2.26	8.0	14.0
	46	603	163	--	1.02	2.22	8.0	14.0
Mont.	19	166	162	11.7	--	--	9.0	20.0
Nebr.	26	234	140	11.0	.99	2.63	--	13.9
N. H.*	243	400	155	16.9	--	--	--	--
N. C.*	214	188	152	--	1.26	--	9.9	19.9
N. Dak.	35	130	140	--	--	--	8.9	--
Ohio	147	394	150	18.0	1.10	--	9.0	20.6
Okla.	181	154	144	--	.70	--	5.8	11.9
R. I.*	47	91	164	15.4	--	--	--	31.5
S. C.*	102	150	137	18.0	1.44**	3.06	12.6	19.7
Tenn.	69	122	148	13.8	1.43	2.78	11.1	16.1
Tex.	908	--	150	18.8	.83	--	6.7	12.7
Utah*	213	708	157	--	--	--	--	--
Va.	42	193	150	13.7	--	--	13.4	18.5
Wis.*	--	187	175	--	--	--	7.7	16.8

\*October 1 to September 30.

\*\*Includes cost of feed to young stock.

\*\*\*Labor income.

Note.-- P and H denote pullets and hens.



# TEXAS TURKEY DEMONSTRATION FLOCKS

	1932	1931
Number counties keeping records - - - - -	79	46
Number growers - - - - -	274	215
Number breeding hens - - - - -	3,884	--
Number birds raised - - - - -	45,116	28,737
Number birds sold - - - - -	39,357	24,743
Number birds sold grading No. 1 - - - - -	35,690	21,044
Sales - - - - -	\$58,203.96	\$66,870.80
Value breeding stock held - - - - -	\$12,348.57	\$ 6,995.72
Total value - - - - -	\$70,552.53	\$73,866.52
Total cost - including breeding stock, feeding, worming, etc. - - - - -	\$27,540.94	\$26,155.43
Income above costs - - - - -	\$43,011.59	\$47,711.09
Cost per bird raised - includes all cost except interest, taxes, labor - - - - -	\$0.615	\$0.91
Gross income per bird - - - - -	\$1.48	\$2.57
Value per bird held for breeders - - - - -	\$2.14	--
Percentage grading No. 1 - - - - -	90.7	85
Turkeys raised per breeding hen - - - - -	11.6	--
Income over feed cost per bird - - - - -	\$0.953	\$1.66

## RESULTS OBTAINED BY TURKEY COOPERATORS IN NORTH DAKOTA (Based on records of 1931)

### General Results

Number of flocks, 6; breeder hens, 136; eggs set, 2,671; poults hatched, 1,582; poults lost, 367; percent of poults lost, 16.9; poults raised to maturity, per hen, 9.6; net income per breeder hen, \$11.86.

A comparison was made between two counties one of which carried on an organized extension program with turkeys. This consisted of conducting demonstration farms and holding field meetings covering the subjects of breeding feeding, brooding, and dressing. The following table shows one year's results.



Results in a county in which turkey extension work  
was done, as compared with a county in which tur-  
key work was not done.

Item	'County where turkey 'extension work was ' carried on	'County where turkey 'extension work was ' not carried on
Pounds of turkey graded - - - - -	38,260	66,777
Percent, by weight, of turkeys graded:		
U. S. Prime- - - - -	62	37
U. S. Choice - - - - -	34	56
U. S. Commercial - - - - -	4	7
Value of turkeys graded:		
U. S. Prime @ 15¢- - - - -	\$3,552.30	\$3,716.33
U. S. Choice @ 12¢- - - - -	1,561.20	4,463.64
U. S. Commercial @ 8¢- - - - -	135.44	389.58
Total- - - - -	\$5,248.94	\$8,569.57
Average value per pound, cents	13.7	12.8

#### RESULTS OBTAINED BY TURKEY COOPERATORS IN NEBRASKA

In Nebraska 21 turkey cooperators in 1932 reported that 844 hens laid an average of 40.8 eggs per hen. The date of the first egg varied from March 6 to April 6. The number of turkey eggs produced by months was as follows: March, 3.6; April, 16.4; May, 15.1; and June, 5.7. Out of 6,384 eggs set a 63 percent hatch was reported. On an average, 14 poults per breeding hen were started under the brooders.

#### FLORIDA POULTRY DEMONSTRATION FLOCKS

##### Relation of Use of Green Feed to Egg Production and Returns (Oct. 1, 1930 - Sept. 31, 1931)

Item	'No. of' 'farms	Eggs 'per bird	Percent 'mortality	Value of eggs ' over feed per bird
No green feed	6	135.2	14.6	\$1.18
Green feed part of year	12	151.3	13.2	1.32
Green feed all year	18	167.0	12.5	1.64
Total or average	36	156.5	20.3	1.45

Several Extension Circulars consisting of questions and answers were issued by J. D. Redditt and J. D. Claybaugh in Nebraska last year. The series included circulars on Brooding and Feeding Baby Chicks, Feeding Hens for Egg Production, Poultry Breeds and Breeding, Poultry Management and Marketing Eggs.



Have you ever checked up on your poultry schools to see if those in the audience were really learning your subject matter? In Ohio they have used a pre-test and a review test to see if their teaching methods are effective. These tests consist of 20 questions written in the true-and-false manner. In case you wish to try this system the questions used in that State are given.

PRE-TEST - POULTRY HUSBANDRY

TRUE

FALSE

- |       |       |   |
|-------|-------|---|
| _____ | _____ | 1. Vegetable proteins supplemented with minerals may replace animal proteins. |
| _____ | _____ | 2. Gastric juice is secreted in the gizzard.                                  |
| _____ | _____ | 3. Broody hens digest food more efficiently than laying hens.                 |
| _____ | _____ | 4. Vitamin C is essential to poultry.   |
| _____ | _____ | 5. Yellow corn contains vitamin D.  |
| _____ | _____ | 6. Nutritional roup is due to lack of protein.                                |
| _____ | _____ | 7. Milk improves hatchability.  |
| _____ | _____ | 8. Fowl pox can be controlled by feeding.                                     |
| _____ | _____ | 9. Sunshine improves shell texture.   |
| _____ | _____ | 10. Vitamins A, B, and D reduce parasitic damage.                             |
| _____ | _____ | 11. Flies are intermediate hosts to roundworms.                               |
| _____ | _____ | 12. Eggs contain over 70 percent water.                                       |
| _____ | _____ | 13. The shell membrane is formed after the thin albumen.                      |
| _____ | _____ | 14. Cod-liver oil aids in preventing blood spots.                             |
| _____ | _____ | 15. Olive-colored yolks are caused by feeding.                                |
| _____ | _____ | 16. Eggs are processed to prevent germ growth.                                |
| _____ | _____ | 17. Cottonseed meal feeding injures egg quality.                              |
| _____ | _____ | 18. The food value of eggs is affected by the ration fed.                     |
| _____ | _____ | 19. Egg size is inherited.  |
| _____ | _____ | 20. Egg color is inherited.   |

REVIEW

- |       |       |  |
|-------|-------|--|
| _____ | _____ | 1. Egg color is inherited.                               |
| _____ | _____ | 2. Egg size is inherited.                                |
| _____ | _____ | 3. The food value of eggs is affected by the ration fed. |
| _____ | _____ | 4. Cod-liver oil aids in preventing blood spots.         |
| _____ | _____ | 5. Eggs contain over 70 percent water.                   |
| _____ | _____ | 6. Flies are intermediate hosts to roundworms.           |
| _____ | _____ | 7. Sunshine improves shell texture.                      |



- \_\_\_\_\_ 8. Milk improves hatchability.
- \_\_\_\_\_ 9. Yellow corn contains vitamin D.
- \_\_\_\_\_ 10. Vegetable proteins supplemented with minerals may replace animal protein.
11. How much digestible protein should a laying mash contain which is to be fed with grain? \_\_\_\_\_
12. Name three feed nutrients not considered in calculating the nutritive ratio. \_\_\_\_\_
13. The feeding value of liquid skimmilk or buttermilk in comparison with other protein feeding stuffs is about as follows: 1 gallon liquid milk = \_\_\_\_\_ pounds condensed milk = \_\_\_\_\_ pounds dried milk = \_\_\_\_\_ pounds meat scraps.
14. How much mash hopper space per hen is recommended by Wash. State College? \_\_\_\_\_
15. How much grain and mash will 100 laying hens consume in a day? \_\_\_\_\_
16. Name four major factors influencing poultry profits.  
1. \_\_\_\_\_ 3. \_\_\_\_\_  
2. \_\_\_\_\_ 4. \_\_\_\_\_
17. Is there a close relationship between size of birds and egg size?  
Answer yes or no.
18. How much more will it cost to produce a pullet from 12¢ chicks than from 7¢ chicks? \_\_\_\_\_
19. What are the usual four months of highest egg prices? \_\_\_\_\_
20. How much hopper space per hen is recommended? \_\_\_\_\_

#### METHOD OF HOLDING BIRDS FOR CAPONIZING

A piece of board, 10 by 18 inches, and two rubber straps cut from an old inner tube make a simple and practical table for holding birds during the caponizing operation. The straps are 1 inch wide and 18 inches long with a 3 inch slit running lengthwise in one end, and a series of holes punched in the other. In cutting these straps see that the vulcanized strip in the tube forms the outer end of the slit, as this reenforcement prevents tearing. By putting one end of the strap through the slit, a slip noose is formed which can be slipped over the legs or wings. The holes are fitted into a nail on the end of the board when the proper position is adjusted. This elastic strap prevents the cockerel from struggling and stretches the heavy thigh muscles from the seat of the operation. Two sets of boards and straps will increase the operating speed, as a helper can be fastening one bird while the other bird is being caponized. The board, being loose on top of a barrel, can be turned at any angle to get the best light.

South Dakota Annual Report, 1932.